

**Agency: Commerce, Community and Economic Development****Grants to Named Recipients (AS 37.05.316)****Grant Recipient: Rural Deltana Volunteer Fire Department, Inc.****Federal Tax ID: 92-0158017****Project Title:****Project Type:** Remodel, Reconstruction and Upgrades

# Rural Deltana Volunteer Fire Department, Inc. - Energy Efficiency Upgrades

**State Funding Requested: \$567,050**  
One-Time Need**House District: 6 / C****Brief Project Description:**

Address and upgrade fire, life, safety, energy, and environmental concerns at department's stations.

**Funding Plan:****Total Cost of Project: \$567,050***There is no other funding needed***Detailed Project Description and Justification:**

INSPECTION &amp; UPGRADE RECOMMENDATIONS

BIG D &amp; CLEARWATER STATIONS

DELTA JUNCTION, ALASKA

PREPARED BY M2C1 CONSTRUCTION AND ENGINEERING

DECEMBER 2009

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## 1.0 Introduction

M2C1 was contacted by Mike Pascal of the Deltanna Volunteer Fire Department to inspect the Big D and Clearwater Station facilities. The purpose of the inspection was to evaluate the current state of construction and make recommendations to improve the Fire, Life, Safety, Energy Efficiency, and Environmental status of each of the facilities.

### 1.1 General Scope

The scope of this effort is defined by two primary tasks as follows:

1. Building Assessment,
2. Improvement Recommendations,

## 2.0 Building Assessment

Each structure was evaluated by the inspecting engineer during the site visit for obvious signs of structural, electrical, mechanical, and architectural deficiencies. In general there were no gross deficiencies as the buildings were of sturdy construction that had been reasonably well maintained. Though there were no blaring errors there are a few concerns noted during the inspection that are listed by each building below:

### 2.1 Big D Station

The Big D Station has been constructed using two distinct methods of building. The large garage area is constructed using insulated precast concrete sandwich panel construction with a trussed roof. An attached small vehicle garage, storage, and general use area with restroom has been added using wood framed walls and trussed roof. Concrete slabs have been poured with the garage area having a French drain installed to assist in water management and removal from the shop floor.

There were several areas of concern found during the site visit as follows:

A. Fire, Life, Safety concerns noted during the inspection are listed below:

- a. Lack of Egress Lighting and Signage
- b. No fire/smoke/freeze detectors or alarms
- c. No emergency power generation capabilities
- d. Well pump not operating properly

B. Energy Efficiency concerns noted during the inspection are listed below:

- a. Vehicle Bay Doors are Low R (Large Heat Loss + Heavy)
- b. No Foundation Insulation (Heat Loss)
- c. Existing Boiler and Hot Water Heater are not energy efficient models

C. Environmental concerns noted during the inspection are listed below:

- a. French Drain is not permitted and may require closure
- b. Water and Septic system are not sufficiently separated to meet Alaska

Department of Environmental Conservation (ADEC) regulations and the septic tank often freezes during the late winter /early spring

c. There are 2 Underground Fuel Tanks (UST's) associated with this property known to have contained petroleum, oils, or lubricants (POL's). These tanks are out of compliance with ADEC regulations

## 2.2 Clearwater Station

The Clearwater Station has been constructed using two distinct methods of building. The large garage area is constructed using insulated precast concrete sandwich panel construction with a trussed roof. An attached two story building with a meeting/teaching area, storage, and general use area with restroom has been added using wood framed walls and trussed roof. There are two egress points to the second story areas, one thru the garage and one to the outdoors. Concrete slabs have been poured with the garage area having a French drain installed to assist in water management and removal from the shop floor.

There were several areas of concern found during the site visit as follows:

A. Fire, Life, Safety concerns noted during the inspection are listed below:

- a. Lack of Egress Lighting and Signage
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- c. No emergency power generation capabilities
- d. Well pump not operating properly and often freezes

B. Energy Efficiency concerns noted during the inspection are listed below:

- a. Vehicle Bay Doors are Low R (Large Heat Loss + Heavy)
- b. No Foundation Insulation (Heat Loss)
- c. Existing Boiler and Hot Water Heater are not energy efficient models

C. Environmental concerns noted during the inspection are listed below:

- a. French Drain is not permitted and may require closure
- b. There is 1 UST' associated with this property known to have contained POL's. This tank is out of compliance with ADEC regulations

## 3.0 Improvement Recommendations

The following recommendations are suggested for consideration as the simplest and most cost effective means to address all the listed concerns found during the inspection:

### 3.1 Big D Station

The following recommendations are intended to correspond with the concerns listed in section 2.1 of this report:

A. Fire, Life, Safety recommendations:

- a. Install Egress Lighting and Signage to conform to code requirements
- b. Install fire/smoke/freeze detectors and alarms
- c. Provide emergency power generation capabilities
- d. Replace well pump, controller, and down hole piping with new

**B. Energy Efficiency recommendations:**

- a. Replace Vehicle Bay Doors with insulated metal panel High R doors
- b. Install Foundation Insulation around building perimeter
- c. Replace existing building mechanical systems with new energy star rate equipment

**C. Environmental recommendations:**

- a. Perform ADEC closure on French Drain
- b. Perform design, permitting, and installation of new septic system
- c. Perform ADEC closure on 2-Each UST's

**3.2 Clearwater Station**

The following recommendations are intended to correspond with the concerns listed in section 2.2 of this report:

**A. Fire, Life, Safety recommendations:**

- a. Install Egress Lighting and Signage to conform to code requirements
- b. Install fire/smoke/freeze detectors and alarms
- c. Provide emergency power generation capabilities
- d. Construct well house over existing well to prevent from freezing

**B. Energy Efficiency concerns noted during the inspection are listed below:**

- a. Replace Vehicle Bay Doors with insulated metal panel High R doors
- b. Install Foundation Insulation around building perimeter
- c. Replace existing building mechanical systems with new energy star rate equipment

**C. Environmental concerns noted during the inspection are listed below:**

- a. Perform ADEC closure on French Drain
- b. Perform ADEC closure on 1-Each UST

**4.0 Rough Order of Magnitude Costs for Each Recommendation**

Cost are a major consideration on any project. Though this project is only in the conceptual planning phase it is important to consider the cost associated with each of the proposed recommendations. A Rough Order of Magnitude (ROM) cost estimate has been prepared for each recommendation and is presented here. The ROM costs are presented in Table 1 below.

Table 1

**Building Recommendation ROMs**

Recommendation	Big D Station (\$'s)	Clearwater Station (\$'s)
Aa) Egress Lighting & Signage	\$32,500	\$38,000
Ab) Fire/Smoke/Freeze Protection	\$28,500	\$33,500
Ac) Emergency Power	\$30,000	\$30,000

# Total Project Snapshot Report

FY 2011 Capital Budget

TPS Report 54128v3

Ad) Well Improvements	\$8,500	\$16,000
Ba) Large Bay Door Replacement	\$46,000	\$46,000
Bb) Foundation Insulation	\$28,000	\$31,500
Bc) New Mechanical Systems	\$16,000	\$16,000
Ca) French Drain Closure	\$5,000	\$5,000
Cb) New Septic System	\$25,000	N/A
Cc) UST closure's	\$50,000	\$30,000
Construction Totals	\$269,500	\$246,000
A/E Services (10%)	\$26,950	\$24,600
Station Totals	\$296,450	\$270,600

## 5.0 Conclusions

In conclusion the two fire stations examined are in relatively good condition yet if compared to current building codes and building practices there are several areas of concern. This report lists those concerns and provides recommendations and roughly figured costs for each of the recommendations provided. this report was generated following a single site visit and thru consultation with the building operators. The report is for planning and budgeting purposes only and should not be considered a design document or engineers project estimate.

## Project Timeline:

Project design will begin upon award of funding. Expected completion by December 2011.

## Entity Responsible for the Ongoing Operation and Maintenance of this Project:

Rural Deltana Volunteer Fire Department, Inc.

## Grant Recipient Contact Information:

Name: Michael Paschall  
Address: P.O. Box 524  
Delta Junction, AK 99737  
Phone Number: 460-8629  
Email: akmike@alaska.net

Has this project been through a public review process at the local level and is it a community priority? ☐ Yes ☒ No

*Rural Deltana Volunteer Fire Department*  
*P. O. Box 524*  
*Delta Junction, AK 99737-0524*  
*Phone: (907) 895-5036*

January 27, 2010

Representative John Harris  
State Capitol Room 403  
Juneau, Alaska 99801

Representative Woddie Salmon  
State Capitol Room 114  
Juneau, Alaska 99801

Senator John Coghill  
State Capitol Room 504  
Juneau, Alaska 99801

Senator Albert Kookesh  
State Capitol Room 11  
Juneau, Alaska 99801

Dear Deltana Legislative Delegation:

The Rural Deltana Volunteer Fire Department provides fire and rescue services to the greater Deltana area including all of the Delta/Greely REAA. The department functions out of two stations located in the Big Delta and Clearwater areas. Each station is over 20 years old and are in need of modifications and upgrades.

We contacted Stephen Hammond of M2C1 Construction and Engineering, a local firm, and he graciously agreed to conduct an inspection of our facilities and provide us with a rough order of magnitude costs for modifications and upgrades to the stations. These upgrades will extend the life of the buildings, improve energy efficiency, and improve the life safety components of the buildings.

Mr. Hammond's inspection report and recommendations are enclosed. Following Mr. Hammond's recommendations, we are requesting assistance from the State of Alaska in the amount of \$567,050 to facilitate these recommendations.

We are asking your assistance and support in placing our request on the State of Alaska's Capital Budget for Fiscal Year 2011.

Please let us know if you can assist us in this endeavor.

Sincerely,

Michael R. Paschall  
President, Board of Directors  
Rural Deltana Volunteer Fire Department



## INSPECTION & UPGRADE RECOMMENDATIONS

BIG D & CLEARWATER STATIONS

DELTA JUNCTION, ALASKA

DECEMBER 2009

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  - b. No Foundation Insulation (Heat Loss)
  - c. Existing Boiler and Hot Water Heater are not energy efficient models
- C. Environmental concerns noted during the inspection are listed below:
  - a. French Drain is not permitted and may require closure
  - b. Water and Septic system are not sufficiently separated to meet Alaska Department of Environmental Conservation (ADEC) regulations and the septic tank often freezes during the late winter /early spring
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